

Amendments to the Claims

The following listing of claims will replace all prior versions, and listings, of claims in the application.

Claims 1-21 (Cancelled).

22. (Currently Amended) A guitar preamplifier according to claim ~~[[21]]~~ 41, wherein said plurality of bandsplitter filters comprise a cascade of $2^N - 1$ pairs of even-poled low and high pass filters arranged such that each pair splits the incoming frequency band in two, where N is the number of stages of pairs in the cascade, and wherein for the nth stage subsequent to the first, each low or high pass filter pair is preceded by $(2^{n-1} - 1)$ all pass filters with phase response corresponding to the $(2^{n-1} - 1)$ other low and high pass filter phase response in that stage such that the phase response of each stage is similar for each frequency band.

23. (Previously presented) A guitar preamplifier according to claim 22, wherein said cascade has two stages of two pole low and high pass filter pairs.

24. (Previously presented) A guitar preamplifier according to claim 21, wherein each low and high pass filter pair is a state variable filter.

25. (Previously presented) A guitar preamplifier according to claim 22, wherein each low and high pass filter pair is a state variable filter.

26. (Currently Amended) A guitar preamplifier according to claim 21, wherein said plurality of bandsplitter filters further comprise variable cross-mixing after one or more stages of said filters.

27. (Currently Amended) A guitar preamplifier according to claim 26, wherein said plurality of bandsplitter filters further comprise variable cross-mixing after one or more stages of said filters ~~filtering means~~.

28. (Previously presented) A guitar preamplifier according to claim 26, further comprising low pass filters after said non-linear circuits to reduce high frequency distortion products.

29. (Currently Amended) A guitar preamplifier according to claim 28, wherein said bandsplitter filters are combined ~~with~~ by said summing network such that in successive stages the lowest frequency band is low pass filtered with a low pass filter and the other frequency bands are all pass filtered with an all pass filter corresponding to said low pass filter, said lowest frequency band is then combined with the next lowest frequency band, and comprising subsequent stages of repeated filtering and combining until all frequency bands are combined, such that the phase response over all frequency bands through the low pass filtering and summing network is identical.

30. (Previously presented) A guitar preamplifier according to claim 21, wherein said non linear circuit for each frequency band has a different gain than those in the other frequency bands.

31. (Previously presented) A guitar preamplifier according to claim 21, wherein said non linear circuits for higher frequency bands have a higher minimum gain than the non-linear circuits for lower frequency bands.

32. (Previously presented) A guitar preamplifier according to claim 21, wherein the distortion by said non-linear circuits is variable.

33-39. (Cancelled).

40. (Currently Amended) A guitar ~~musical instrument~~ preamplifier, comprising:

a) electronic filters including a first filter network, the network including:
an input for receiving an input signal,
a plurality of ~~outputs~~ band splitter filters for producing a plurality of outputs from said input signal, and wherein

[[a]] said plurality of band splitter filters [[to]] split a ~~signal on the input~~ said input signal into a plurality of different, substantially equi-phase frequency bands in which frequency bands of substantially any frequency passed by more than one of said band splitter filters are substantially in phase in all of said bands;

and

b) a plurality of non-linear circuits coupled to [[a]] said plurality of [[the]] outputs to distort respective output frequency bands; and

c) a summing network coupled to said plurality of non-linear circuits to recombine said output frequency bands.

41. (Currently Amended) A musical instrument preamplifier system, comprising:

~~electronic filters~~ a plurality of band splitter filters for splitting an input signal into a plurality of different, substantially equi-phase frequency band ~~outputs~~ output signals in which frequency bands of substantially any frequency passed by [[a]] said plurality of band splitter filters are substantially in phase in all of said bands, and

a plurality of non-linear circuits coupled to said plurality of band splitter filters to distort respective output frequency bands,

wherein the plurality of band splitter filters include a cascade of a first filter network, and one or more subsequent filter networks, each network including:

an input for receiving an input signal,

a plurality of outputs for providing said substantially equi-phase frequency band output signals,

wherein said plurality of band splitter filters ~~[[to]]~~ split said input signal ~~a signal on the input~~ into a plurality of different frequency bands for the outputs,

wherein for one or more of the subsequent networks, the input of each is coupled to one output of another network via a filter to provide substantially equi-phase frequency bands on the network's outputs,

and wherein outputs of some of the networks form frequency band outputs of the plurality of band splitter filters.